

# 2-D ELECTROPHORESIS PROTEAN® Plus Precast Gels for 2-D

Expression Proteomics // Tools for Protein Separation and Analysis

- Maximum resolution
- Excellent reproducibility
- Innovative design
- Ease of handling
- Part of a complete system

## Quality, Performance, and Convenience in Large Format Precast 2-D Gels

### Bio-Rad Expression Proteomics

Bio-Rad's approach to expression proteomics focuses on three technologies: sample preparation, two-dimensional (2-D) electrophoresis, and imaging and analysis. Each technology area is ideally suited to a 2-D gel electrophoresis approach to analysis of sample proteins. By providing choices in methodology, protocols, and products, Bio-Rad's expression proteomics tools help you to achieve optimal results in any 2-D experiment.

### The Precast Gel Advantage

PROTEAN Plus large format polyacrylamide 2-D gels offer the reproducibility critical to your results as well as unsurpassed convenience. Designed for perfect compatibility with the PROTEAN Plus Dodeca™ cell, PROTEAN Plus precast gels eliminate the painstaking pouring and inconsistency of handcast large format gels.

Running 24 cm gels has never been easier. PROTEAN Plus precast gels offer many advantages compared to handcast gels, including:

- **The highest-resolution, highest-throughput 2-D gel system** from Bio-Rad. This system includes the PROTEAN Plus Dodeca cell, capable of running up to 12 gels, the high-throughput Dodeca stainer, and the Trans-Blot® Plus tank blotter for easy transfer of up to 3 PROTEAN Plus gels in less than 60 min

- **Optimal gel dimensions** for a square gel aspect ratio, resulting in improved spot resolution
- **Easy-to-use glass cassettes** that not only protect gels but also eliminate the time-consuming setup and handling typical of plastic-backed gels
- **Leak-free, trouble-free runs.** PROTEAN Plus precast gel cassettes are sealed at the edges to prevent current leaks during electrophoresis
- **High-sensitivity staining.** PROTEAN Plus precast gels do not have backing, which typically interferes with staining critical to protein detection
- **Easy tracking** with a bar code and a human-readable, unique alphanumeric string. Bar codes can be read with any standard bar code reader (Code 128 Subset B) and input into any database
- **Easy handling** using Bio-Rad's gel clip, Dodeca stainers, and AnyGel™ stands. For more information on these products, request bulletins 2953 and 2702



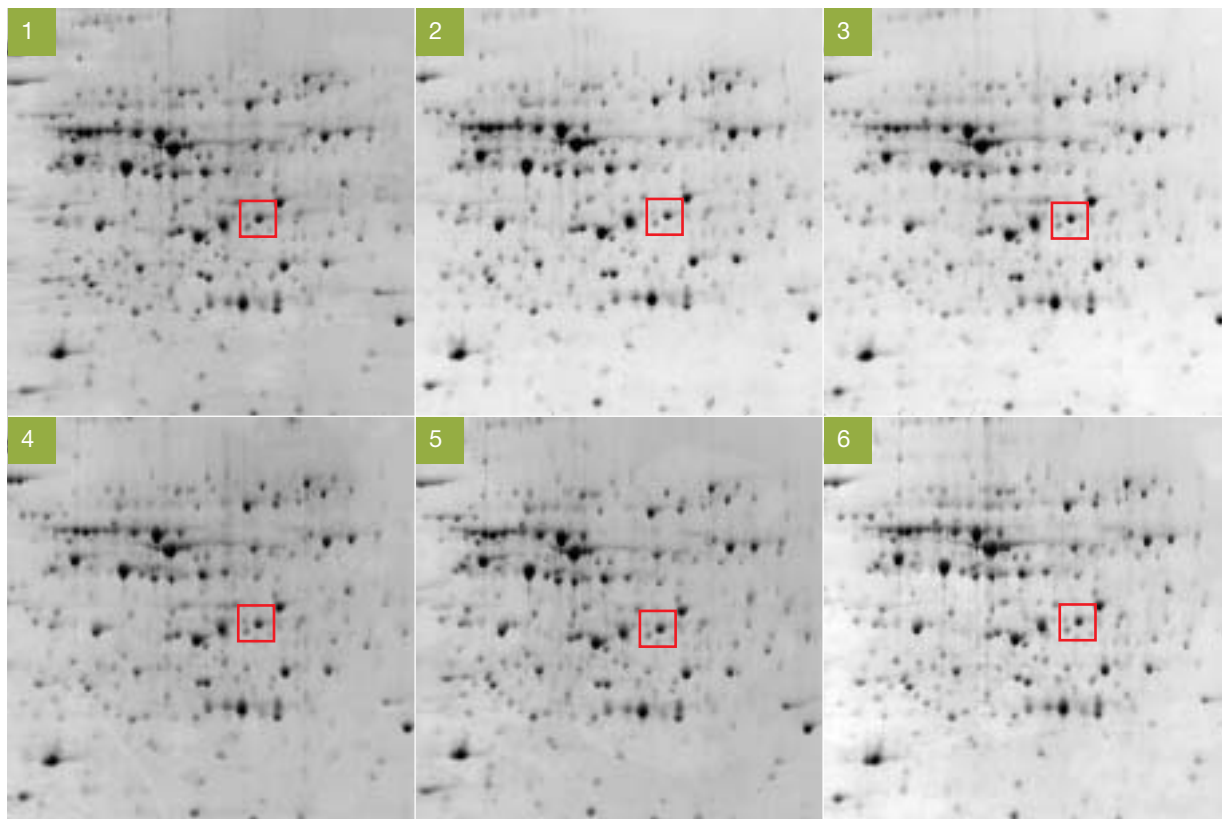
PROTEAN Plus 2-D  
Precast Gel System

**BIO-RAD**

## Unsurpassed Reproducibility

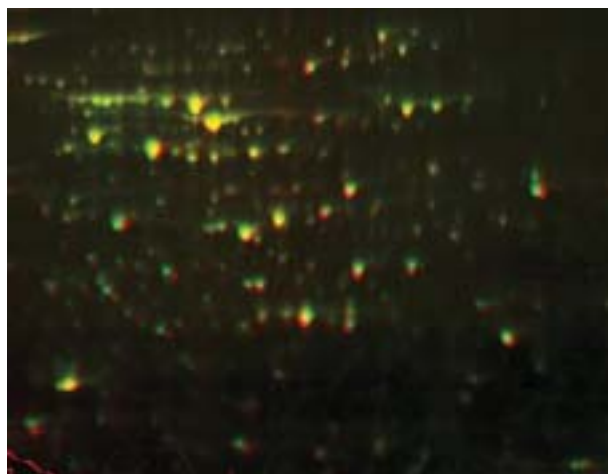
### High Throughput and Quality

PROTEAN Plus precast gels allow maximum throughput without compromising quality. Twelve 24 cm ReadyStrip™ IPG strips, pH 5–8, were loaded with 400 µg of an *E. coli* protein sample. Second-dimension separation was on PROTEAN Plus 12% Tris-HCl precast gels run in a PROTEAN Plus Dodeca cell. All gels were stained with Bio-Safe™ Coomassie stain in a Dodeca stainer and imaged on the GS-800™ calibrated densitometer. Images and data were analyzed using PDQuest™ 2-D analysis software. Six of the gels are shown below. Boxes indicate spots compared on the opposite page.



### Excellent Spatial Reproducibility

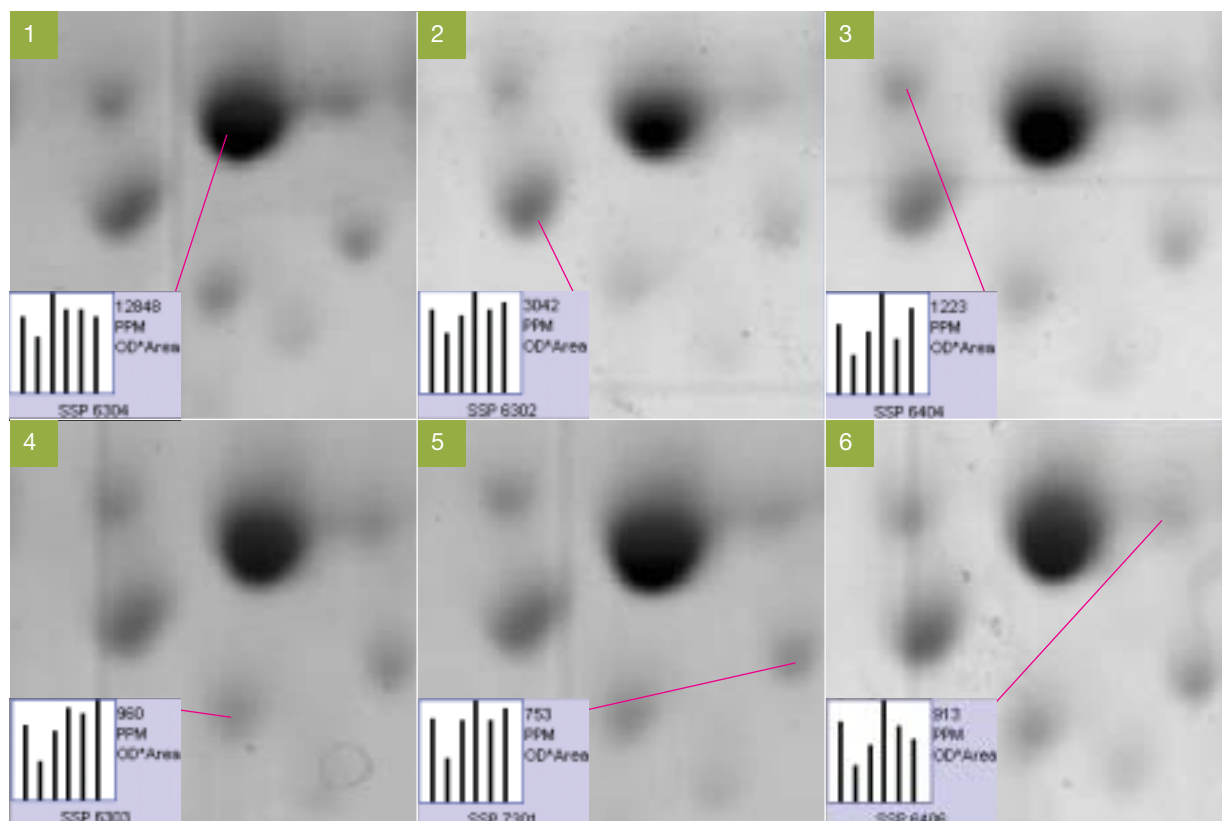
A key determinant of gel-to-gel reproducibility is x-y spot position variability. The Multichannel Viewer tool in PDQuest software allows the overlay of up to three gels with computer-generated color coding. Two randomly selected gels from the set of twelve described above were overlaid (right). In one gel, spots are green on a black background, and in the other, red. Yellow spots indicate perfect positional matches. Most red and green spots, although not perfectly matched, are adjacent to each other, indicating close x-y spot positioning.



## Superior Quantitative Reproducibility

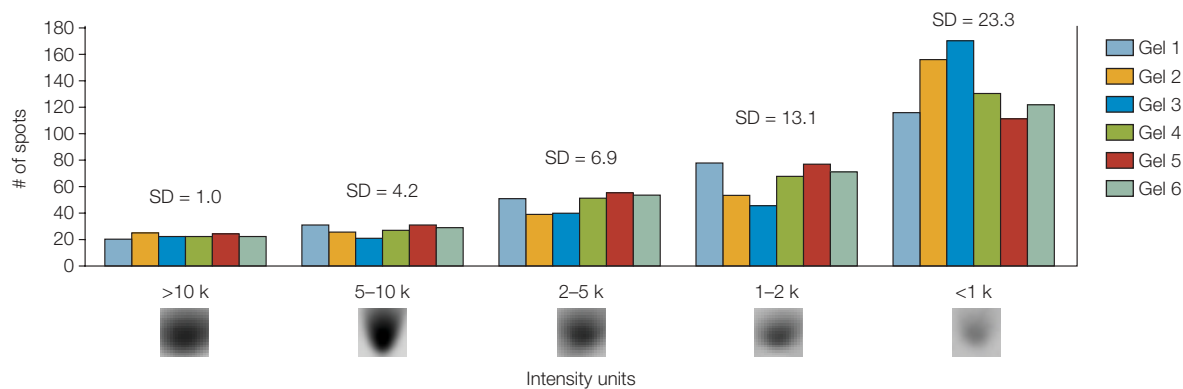
Quantitative reproducibility is important for the analysis of differential protein expression. Slight variations can be attributed to many factors, for example, background staining differences, inconsistency in sample preparation, and sample loss during the loading process. However, PROTEAN Plus precast gels eliminate inconsistencies introduced by hand casting, ensuring maximum gel-to-gel reproducibility and a high degree of confidence in your data.

Shown below are magnified views of the boxed area on each of the six gels on the opposite page. PDQuest software generated histograms of each spot on the six gels. Shown in the lower left corner of each panel, each histogram shows bars recording the relative optical density of the same spot on the six gels analyzed. Bars represent gels 1–6 from left to right.



## Outstanding Qualitative Reproducibility

Qualitative reproducibility can be evaluated by a comparison of matched spots with similar intensities. Matched protein spots from the six gels on the opposite page were categorized into five intensity ranges (below). High- and medium-intensity spots (>1 k intensity units) exhibit relatively low standard deviations, demonstrating low variability between gels.



## Specifications

Gel format	24 cm IPG well
Gel dimensions	
W x L	25.6 x 23.0 cm
Gel thickness	1.0 mm
Cassette dimensions (W x L)	27.0 x 25.0 cm
Cassette material	Recyclable glass
Comb material	Polycarbonate
Buffer volume	23 L for 12 gels
Gel shelf life	12 weeks from date of manufacture
Storage conditions	Store flat at 4°C; do not freeze

## Ordering Information

Catalog # Description

### PROTEAN Plus Precast Gels

161-1511 PROTEAN Plus Tris-HCl Gel, 12% resolving gel, 4% stacking gel, 24 cm IPG well, 25.0 x 27.0 cm

### PROTEAN Plus Dodeca Cell

165-4150 PROTEAN Plus Dodeca Cell, 100/120 V, includes tank, lid, buffer recirculation pump with tubing, instructions

165-4151 PROTEAN Plus Dodeca Cell, 220/240 V

### ReadyStrip 24 cm IPG Strips, 12 per Package

163-2042 ReadyStrip IPG Strips, pH 3–10

163-2043 ReadyStrip IPG Strips, pH 3–10 nonlinear

163-2044 ReadyStrip IPG Strips, pH 4–7

163-2045 ReadyStrip IPG Strips, pH 3–6

163-2046 ReadyStrip IPG Strips, pH 5–8

### Stains and Staining Accessories

161-0787 Bio-Safe Coomassie Stain, 5 L

161-0435 Coomassie Brilliant Blue R-250 Staining Solutions Kit, includes 1 L Coomassie Brilliant Blue R-250 staining solution, 2 x 1 L Coomassie Brilliant Blue R-250 destaining solution

161-0480 Dodeca Silver Stain Kit, Large

161-0481 Dodeca Silver Stain Kit, Small

170-3138 SYPRO Ruby Protein Gel Stain, 5 L

165-3400 Dodeca Stainer, large, 100–240 V, includes 13 trays (12 translucent and 1 white), 12 tray attachments, shaking rack, solution tank, lid with shaker, shaker control unit, gel clip, instructions

165-3401 Dodeca Stainer, small, 100–240 V, includes 13 trays (12 translucent and 1 white), 12 Criterion™ tray attachments, shaking rack, solution tank, lid with shaker, shaker control unit, gel clip, instructions

165-5131 AnyGel Stand, 6-row

165-3414 Gel Clip

### Premixed Buffers for Tris-HCl Gels

161-0737 Laemmli Sample Buffer, 30 ml

161-0771 10x Tris/Glycine, 5 L cube

161-0772 10x Tris/Glycine/SDS, 5 L cube

### Protein Standards

161-0378 Precision Plus Protein™ Standard Plugs, unstained, 24 applications

### Blotting Products for PROTEAN Plus Gels

170-3990 Trans-Blot Plus Cell With Plate Electrodes and Super Cooling Coil, includes 3 gel holder cassettes, cell with lid and power cables, 6 fiber pads, 1 pack blot absorbent paper (26.5 x 28 cm, pack of 30), roller, stirbar

162-0251 Nitrocellulose Membranes, 0.45 µm, 26.5 x 28 cm, 10 sheets

162-0252 Nitrocellulose Membranes, 0.2 µm, 26.5 x 28 cm, 10 sheets

162-0253 Supported Nitrocellulose Membranes, 0.2 µm, 26.5 x 28 cm, 10 sheets

162-0254 Supported Nitrocellulose Membranes, 0.45 µm, 26.5 x 28 cm, 10 sheets

162-0255 Immun-Blot® PVDF Membranes, 25 x 28 cm, 10 sheets

162-0256 Sequi-Blot™ PVDF Membranes, 25 x 28 cm, 10 sheets

170-3996 Trans-Blot Plus Filter Paper, 26.5 x 28 cm, 60 sheets

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